

Name _____

STUDY GUIDE: Chapter 1

1. Write the meaning that corresponds with the following prefixes/suffixes:

exo _____	hetero _____	homo, homeo _____
co _____	endo _____	bi, di _____
bio _____	photo _____	multi, poly _____
eco _____	cyto _____	uni, mono _____
omni _____	a, an, un _____	aqua, hydro _____

2. Write the prefix/suffix that corresponds with the following meanings:

plants _____	self _____	deficient _____
three _____	loving _____	equal _____
half _____	fearing _____	green _____
nucleus _____	before _____	nourish _____
between _____	excessive _____	true _____

3. What do the following words literally mean? (ex: arthropod = “joint foot”)

heterotroph _____	hydrophilic _____
exocytosis _____	prokaryote _____

4. Define science:

5. A good experiment should have:

- A testable _____ (possible answer to a scientifically testable question)
- Detailed qualitative and/or quantitative _____
- An experimental group and a _____ group
- How many variables being changed at one time? _____

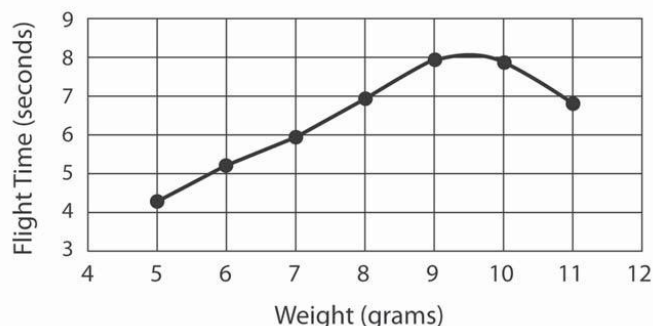
6. _____ observations are descriptive characteristics while _____ observations are numbers obtained through counting or measuring.

7. Label each of the following as an “inference,” a “qualitative observation”, or a “quantitative observation.”

- The plant has pink flowers. _____
- The plant is 12 inches tall. _____
- The plant is healthy because it was given sunlight and water. _____

8. The _____ variable is the factor in a controlled experiment that is deliberately changed while the _____ variable is the factor being observed and changes in response to the changing variable.

Use the following graph, which shows the effect of weight on the flight time of a paper airplane, to answer questions 9-10.



9. The independent variable is _____ while the dependent variable is _____.

10. Based on the graph, we can infer that the ideal weight for a paper airplane is _____ grams because _____.

11. A well-tested explanation that enables scientists to make accurate predictions and has never been shown to be false is called a _____. A concept based on scientific laws where general agreement is present is called a _____.

12. An objective, verifiable observation is a _____. A _____ generalizes a body of observations while describing things but not explaining them.

13. What are the 8 criteria that all living things must meet?

- | | |
|----|----|
| 1. | 5. |
| 2. | 6. |
| 3. | 7. |
| 4. | 8. |

14. The genetic material that organisms inherit from their parents is found in _____. The basic unit of all living things is the _____.

15. _____ organisms are made of one cell while _____ organisms are made of many cells.

16. Organisms maintain relatively constant internal physical and chemical conditions through _____. The chemical reactions through which an organism builds up or breaks down materials are referred to as _____. The signal to which an organism responds, such as light or temperature, is known as a _____.

17. _____ reproduction produces identical offspring from one parent. _____ reproduction produces new organisms from two different parents.

18. Give 3 examples of how organisms respond to stimuli.

- 1.
- 2.
- 3.

19. Give 3 examples of how organisms maintain homeostasis.

- 1.
- 2.
- 3.

20. Evolution refers to the change of _____ of organisms over _____. In addition to dividing, cells must _____.

21. I really want more hummingbirds to visit my yard. Design an experiment using the scientific method to help me determine if planting flowers of a certain color will attract them. In your answer, be sure to

- List the 5 steps of the scientific method, in order
 - 1.
 - 2.
 - 3.
 - 4.
 - 5.
 - State the specific problem you are trying to solve
 -
 - Research what colors you think would make good candidates for the experiment
 -
 - Write your specific hypothesis
 -
 - Explain how you will test your hypothesis (include necessary supplies)
 -
-
- Be sure to identify the following
 - Your independent variable
 -
 - Your dependent variable
 -
 - At least 3 controls
 -
 -
 -
- Explain how you will draw your conclusion
 -